

# Natural Gas Storage in California

MRW & Associates, Inc.  
Natural Gas Storage Forum  
November 15, 2007  
Sacramento, California



# Outline

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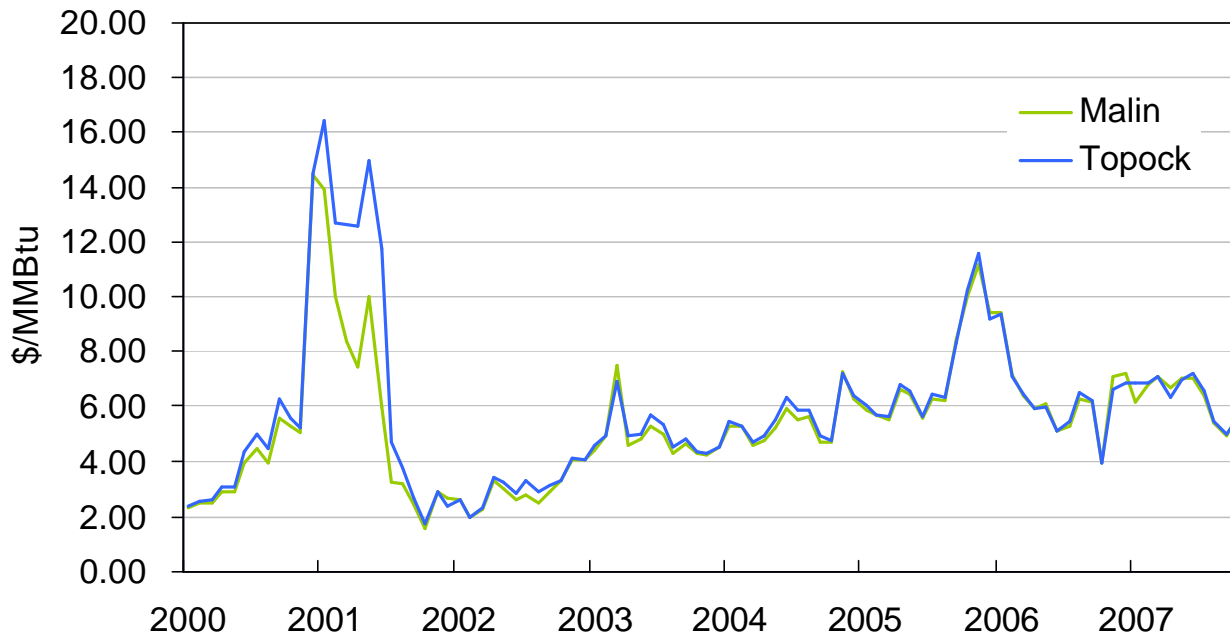
- Uses of natural gas storage
- Natural gas storage in California
- Storage regulation
  - FERC
  - CPUC

# Use of Natural Gas Storage

## Storage as a price hedge

- Gas prices vulnerable to short-term spikes
  - California energy crisis (2001) and Hurricane Katrina (2005)
- Storage can provide price stability

Bidweek Price of Natural Gas, Jan. 2000 – Oct. 2007



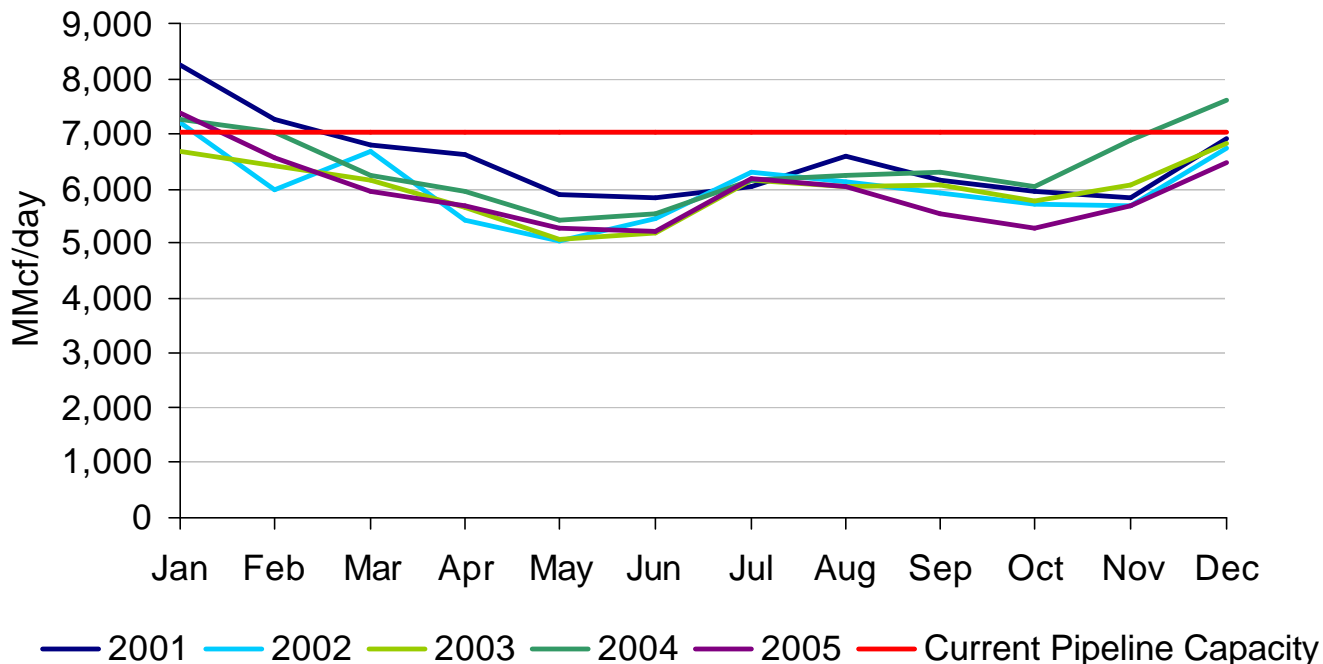
Source: Platts Gas Daily, Jan. 2000 – Oct. 2007

# Use of Natural Gas Storage

Storage as a supply hedge to meet peak demand

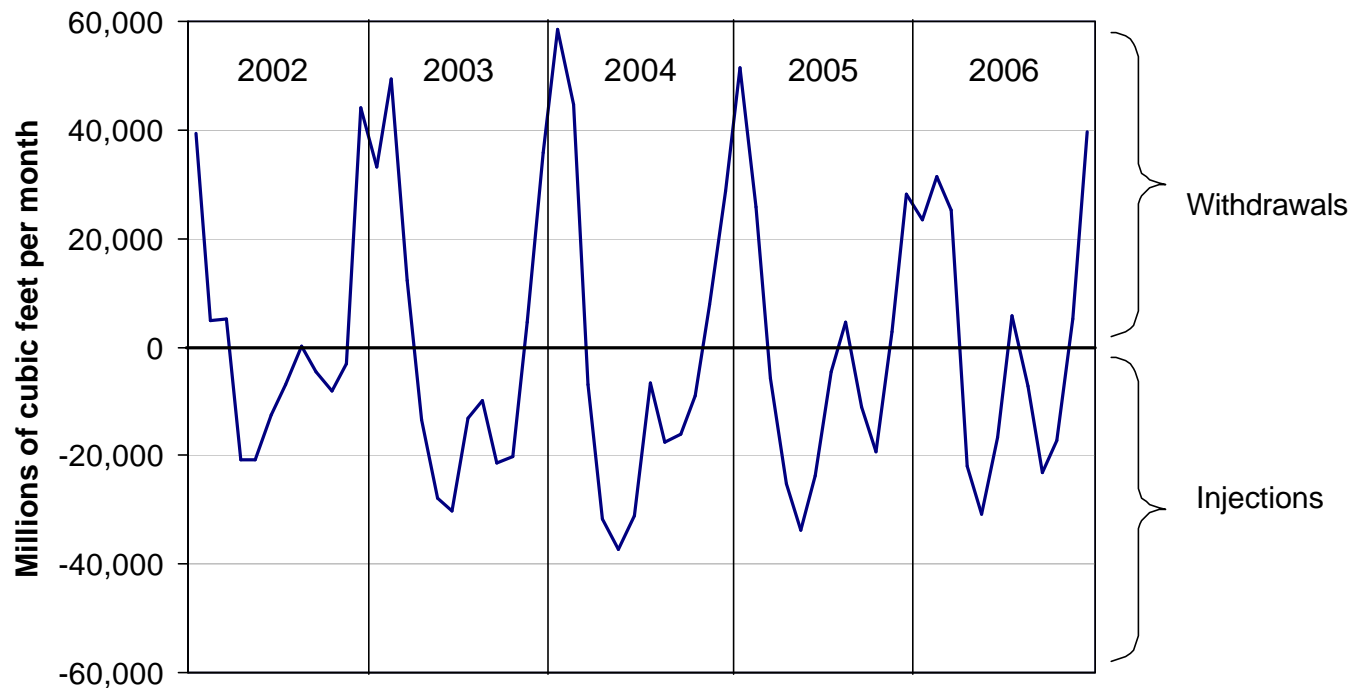
- Winter peak demand often higher than pipeline capacity
- Gas stored in summer can be used to meet this demand

Natural Gas Demand in California



Source: EIA 2007

# Seasonal Natural Gas Storage



Source: EIA 2007

- Withdrawals peak in Dec. and Jan. with overall gas demand
- Net injection decreases in summer due to high demand from gas-fired electric generation

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# California Storage Market Development

Pre-1993

Bundled Utility Transport and Storage

1993  
Gas  
Storage  
Decision

Utility Core  
Storage

Utility Non-Core  
Storage

Option:  
Independent  
Storage

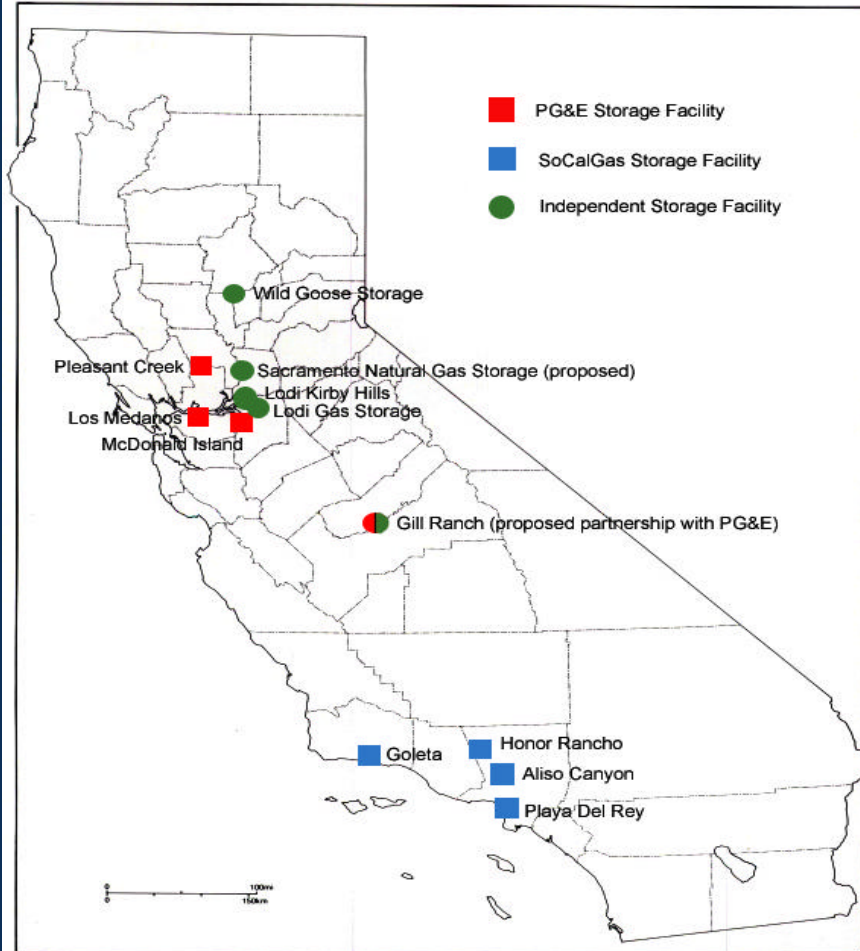
1999

Wild Goose Storage

2002

Lodi Gas Storage

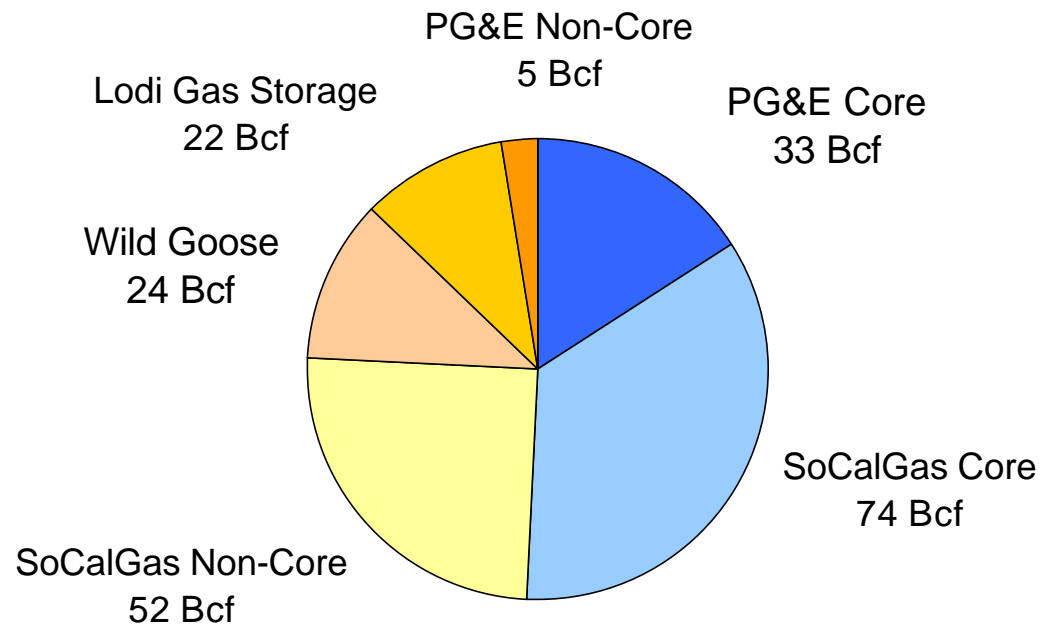
# California Natural Gas Storage



- SoCalGas owns all Southern California storage facilities
- PG&E owns about half of the storage capacity in Northern California
- Other half owned by Wild Goose (Niska) and Lodi Gas Storage
- Three proposed projects in Northern California

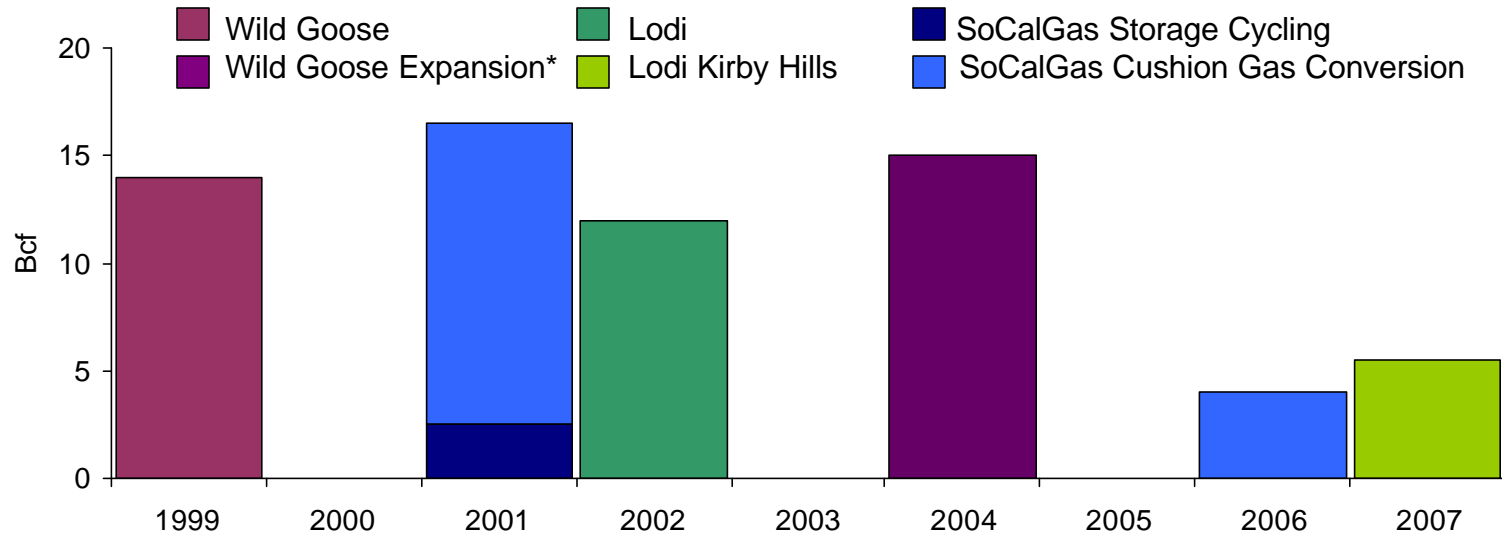


# Storage Capacity Allocation



Note: Under the Edison Settlement (A.06-08-026) SoCalGas is seeking to reduce Sempra core inventory to 70 Bcf.

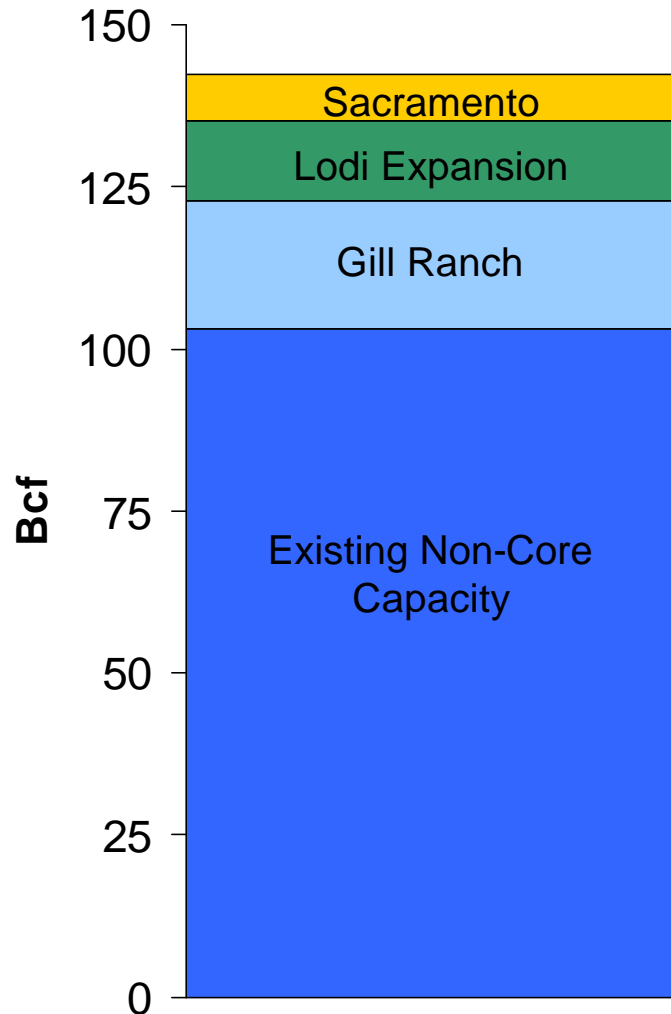
# Recent Storage Facilities



- Development and expansion of independent storage facilities
- SoCalGas expansion through conversion of cushion gas and storage cycling
- PG&E is expanding withdrawal capability by 100 MMcf/day with line 57C addition to McDonald Island (not shown)

\* Wild Goose was approved for a 15 Bcf expansion but has only developed 10 Bcf.

# New Storage Capacity on the Horizon



## **Sacramento Natural Gas Storage**

- 7.5 Bcf independent facility
- Proceeding in progress

## **Lodi Gas Storage Expansion**

- 12 Bcf addition to current facility
- Proceeding in progress
- Expected operation in Fall 2008

## **Gill Ranch (PG&E and Northwest Natural)**

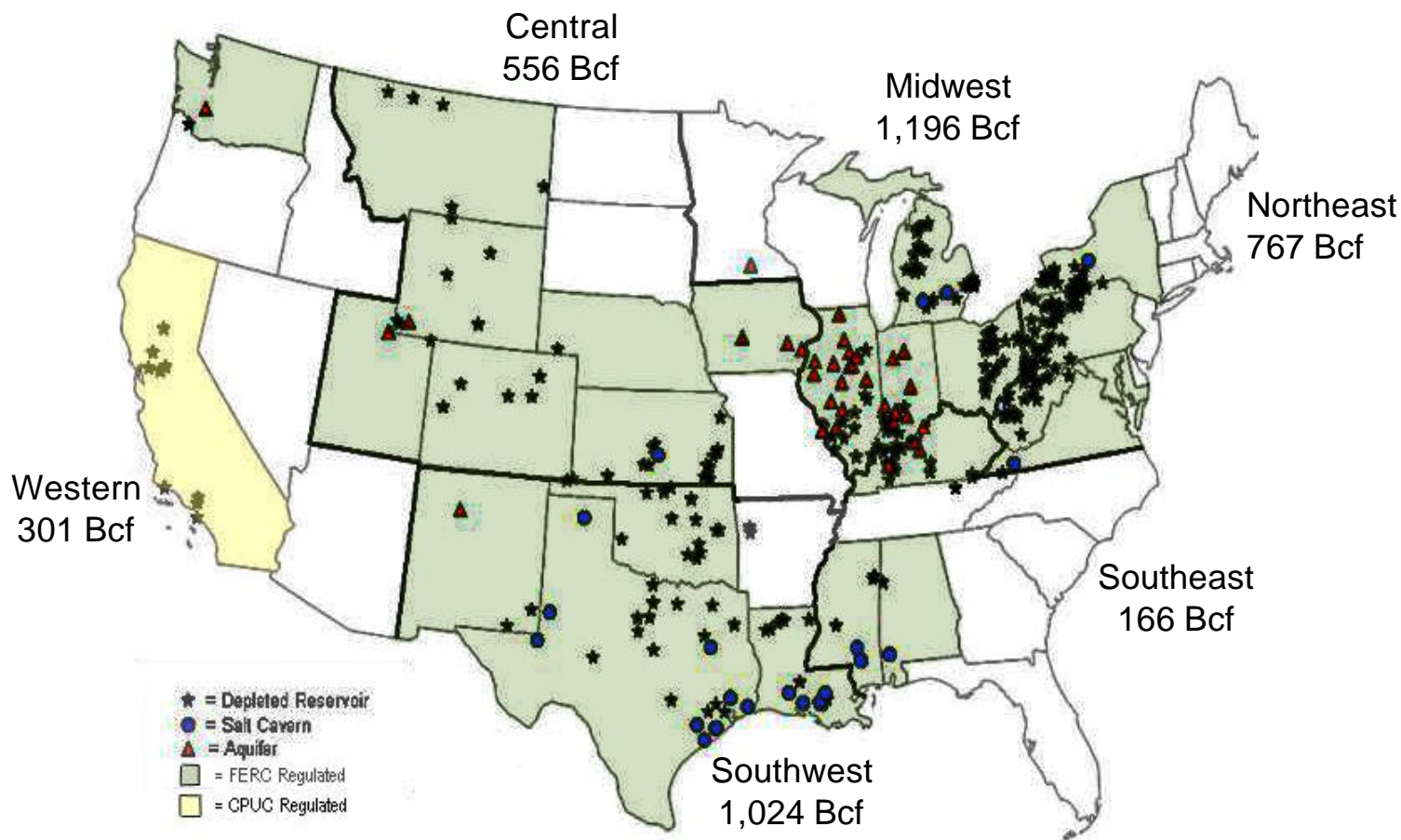
- 15 Bcf Northwest Natural
- 5 Bcf PG&E
- Application expected to be filed in Spring 2008
- Expected operation in 2010

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# FERC Regulatory Overview



Source: Energy Information Administration, Office of Oil & Gas, Natural Gas Division Gas, Gas Transportation Information System

# FERC Regulation of Natural Gas Storage

- FERC grants either cost-based or market-based rates
- Applicant must demonstrate lack of market power to obtain market-based rates
- FERC denied Red Lake market-based rates
  - Determined that southern CA market was concentrated
  - Denied market-based rates even though Red Lake would reduce concentration
- FERC adopted final rules in 2006 implementing 2005 Energy Policy Act
  - Allowed to grant market-based rates even if applicant unable to demonstrate lack of market power
  - Modified market power analysis to consider substitutes (e.g., pipeline capacity, local gas production, LNG terminals)

# CPUC Regulation of IOUs

- Cost-based revenue requirements for core storage
- Rate caps for non-core storage
  - Governed by settlement agreements
  - Revenue sharing between ratepayers and shareholders (SoCalGas)

Rate Caps <sup>(1)</sup>	PG&E	SoCalGas (current)	SoCalGas (proposed)
Inventory (\$/Dth)	1.6205	14.271	1.63
Injection per day (\$/Dth)	15.6336	--	60.00
Withdrawal per day (\$/Dth)	11.7865	--	30.00

(1) Rates from PG&E Schedule G-NFS and SoCalGas Schedule G-TBS

# SoCalGas Revenue Sharing

- Partial risk-sharing
  - \$21 million of total revenue requirement “at risk”
  - Balance recovered through Non-Core Storage Balancing Account (NSBA)
- Profits shared 50/50
- Based on this formula, shareholder profits were \$26 million in 2006

## SoCalGas 2006 Costs and Revenue (\$Millions)

Revenue Requirement	NSBA	Allocated Costs	Total Revenue	Profit	Shareholder Profit
\$35	\$14	\$21	\$72	\$51	\$26



# CPUC Regulation of Independents

- CPCN and CEQA
- Market-based rates for all independent storage facilities
- Reporting requirements to protect against market power
  - Short- and long-term agreements and quarterly transaction summaries of short-term sales
  - Any changes in status (e.g., purchase of additional storage capacity, change of control, etc.)
    - CPUC approved the sale of Wild Goose to Niska Gas Storage, owned by the Carlyle/Riverstone Global Energy and Power Funds in 2006
- Prohibited from engaging in hub and service transactions with parents or affiliates

# Regulatory Proceedings Addressing Natural Gas Storage

## California energy crisis settlement

(A.06-08-026)

- Proposal to reduce core capacity from 83 Bcf to 70 Bcf
  - 83 Bcf includes 9 Bcf from SDG&E
  - How much storage is ‘needed’ for core customers?
- Cap on profits
  - \$5 million (SCGC) - \$20 million (SoCalGas and SDG&E)
  - What is a reasonable amount of shareholder profit?
- Rate structure
  - Currently allowed to charge “market-based” rates for non-core storage
  - Interveners have argued for cost-based rates for non-core storage

# Regulatory Proceedings Addressing Natural Gas Storage

- Lodi sale to Buckeye Partners
- Gill Ranch Partnership
  - Joint ownership of 20 Bcf capacity
    - 15 Bcf for Northwest Natural and 5 Bcf for PG&E
  - Capacity to be marketed separately
    - PG&E expected to market capacity as part of current gas storage portfolio
    - Northwest Natural expected to apply for market-based rates
  - Regulatory requirements
    - Joint CPCN application expected Spring 2008

# Conclusion

- Storage is an essential part of California's natural gas infrastructure
- California natural gas storage has been expanding
  - Two new independent operators in Northern California
  - Significant SoCalGas expansions since 2001
  - Northern California storage capacity will continue to expand
- CPUC has consistently granted market based rates to independent facilities
- Issues to be addressed later today
  - Is there a need for more storage?
  - What are barriers to **utility** development of storage?
  - What are barriers to **independent** development of storage?